MULTIPARAMETER REAL-TIME MONITORING OF THE CHRONIC PATIENTS OUTSIDE HOSPITAL ON ACCOUNT OF LONG RANGE WIRELESS TRANSMISSION TECHNOLOGY

Hongyu Wang, Chunge Cao, Dongxia Cui, Ling Yang, Chuanshi Xiao. No. 2 Hospital of Shanxi Medical University, Shanxi, China

Background Many patients with chronic disease are managed outside the hospital environment and they have conditions such as hypertension, diabetics, coronary heart disease, or may have multiple coronary risk factors. The authors examined the effectiveness of outpatient real-time monitoring. The authors carried out real-time monitoring of four physiological parameters by long range wireless transmission technology.

Methods Two hundred subjects with the average age of 57 years (57.53±12.56) from communities of Taiyuan city were selected. The four-parameters real-time monitoring were measured at home in 1 day. The data were obtained by wireless transmission and analysed by monitoring centre doctors.

Results The number of strips of real-time monitoring included 1468 blood pressure strips, 1331 ECGs, 1163 oxygen saturation strips and 1082 blood sugar strips. There was a higher frequency of abnormal blood sugar than ECG, oxygen saturation, systolic and diastolic pressure (39.09%, 25.92%, 23.30%, 17.03%, 8.24%, p<0.001); the proportion of abnormal blood sugar in diabetics was high than in hypertensives and in controls (57.0%, 20.62%, 7.80%, p<0.001); the proportion of abnormal systolic pressure in hypertensives was high than in diabetics and in controls (28.36%, 12.45%, 2.34%, p<0.001); diastolic pressure (14.33%, 5.27%, 2.33%, p<0.001).

Conclusion The proportion of abnormalities recorded in chronic disease was high in this study. Physiology parameter real-time monitoring on account of long range wireless transmission technology was practical and feasible, and may be beneficial for outpatient management of chronic disease.